

## **DIRECTIONAL COUPLER FOR USE IN VCO UNEQUAL POWER SPLITTING**

### **ABSTRACT OF THE DISCLOSURE**

A transceiver is provided that includes a TX path mixer that up converts, a RX path mixer that down converts, and a local oscillator that provides a mixing frequency for the TX and RX mixers. The transceiver further provides a directional coupler having an input path coupled to the input of a UHF VCO for dividing power to a TX path and a RX path in the directional coupler. A mixer is provided to mix the input/output frequencies from the RX IF/TX IF. The operating frequency range of the directional coupler is greater than the output frequency of the UHF VCO. The directional coupler splits the UHF VCO unequal power at different ports of the directional coupler to redistribute the power in different ports, thus preventing the TX signal from being reflected back to the RX signal. The invention further provides the additional isolation required by the TX local oscillator chain by preventing reverse power feed into the RX local oscillator. The invention additionally provides for a reduced component count thereby providing savings in cost, complexity, size and power consumption.